

WHAT IS CLAIMED IS:

1. An exhaust system, said system including:

a muffler; and

5 a flapper finger valve assembly arranged within said muffler.

2. The system of claim 1 wherein said flapper finger valve assembly having a tube.

3. The system of claim 2 wherein said flapper finger valve assembly system having

10 at least one flapper finger valve, said flapper finger valve having a generally C-shape.

4. The system of claim 2 wherein said flapper finger valve assembly system having

at least one relief valve retainer, said relief valve retainer generally having a C-shape.

15 5. The system of claim 3 wherein said tube having a plurality of orifices

therethrough.

6. The system of claim 5 wherein said flapper finger valve having a predetermined

spring coefficient.

20 7. The system of claim 6 wherein said flapper finger valve is arranged around said

tube, said flapper finger valve covers said orifices when said flapper finger valve is in a closed position.

8. The system of claim 7 wherein said flapper finger valve moves in a radially outward direction when exposed to a predetermined pressure.

9. The system of claim 8 wherein said flapper finger valve is capable of being tuned
5 to specific exhaust system characteristics.

10. The system of claim 9 wherein said flapper finger valve having predetermined angled bends, thicknesses and widths.

10 11. The system of claim 1 wherein said flapper finger valve assembly is electronically controlled and tunable.

12. A muffler for use in an exhaust system, said muffler including:
a body; and
15 a flapper finger valve assembly arranged within said body.

13. The muffler of claim 12 wherein said flapper finger valve assembly having a tube with a plurality of orifices therethrough.

20 14. The muffler of claim 13 wherein said flapper finger valve assembly having a plurality of flapper finger valves arranged around an outer surface of said tube, said flapper finger valves covering said orifices when said flapper finger valve assembly is in a closed position.

15. The muffler of claim 14 wherein said flapper finger valve assembly having a plurality of relief backers arranged around said flapper finger valves, said backers will control a maximum distance of radial movement in an outward direction for said flapper finger valve.

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16. The muffler of claim 15 wherein said flapper finger valves and said relief backers are secured to an outer surface of said tube.

17. The muffler of claim 16 wherein said flapper finger valves having a
10 predetermined thickness and spring coefficient, said flapper finger valves will open or move radially away from said tube at predetermined exhaust pressures.

18. The muffler of claim 17 wherein said flapper finger valves being electronically controlled or tunable.

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19. The muffler of claim 12 wherein a plurality of said flapper finger valve assemblies are arranged within a reduced size muffler in parallel or series.

20. A flapper finger valve assembly for use in an exhaust system, said assembly
20 including:

a tube, said tube having a plurality of orifices therethrough;

a plurality of flapper finger valves generally having a C-shape, said flapper finger valves arranged on an outside surface of said tube, said flapper finger valves align with said

orifices such that said orifices are covered by said flapper finger valves when the assembly is in a closed or equilibrium position;

5 a plurality of retainers generally having a C-shape, said retainers arranged around said flapper finger valves, said retainers having a fixed radius and deforming a maximum limit of radial movement for said flapper finger valves when said flapper finger valves are in an open position; and

a fastener for securing said flapper finger valves and said retainers to said tube.